AP
IFW

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:

Paul Durrant, et al.

Serial No. 10/075,140

Filed: February 14, 2002

For: COMPUTER SYSTEM

§ Group Art Unit: 2113
§
§ Examiner: Duncan, Marc M.
§
§ Atty. Dkt. No.: 5681-10800
§ P5120

CERTIFICATE OF MAILING
37 C.F.R. § 1.8

I hereby certify that this correspondence is being deposited with the U.S. Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date indicated below:

Robert C. Kowert
Name of Registered Representative

May 22, 2006
Date

Signature

APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir/Madam:

Further to the Notice of Appeal filed March 9, 2006 and Notice of Panel Decision mailed April 21, 2006, Appellants present this Appeal Brief. **This Appeal Brief is timely filed within the one month period from the mailing date of the Notice of Panel Decision. Accordingly, no extension of time fee should be due.** Appellants respectfully request that the Board of Patent Appeals and Interferences consider this appeal.

I. REAL PARTY IN INTEREST

As evidenced by the assignment recorded at Reel/Frame 012617/0197, the subject application is owned by Sun Microsystems, Inc., a corporation organized and existing under and by virtue of the laws of the State of Delaware, and now having its principal place of business at 4150 Network Circle, Santa Clara, CA 95054.

II. RELATED APPEALS AND INTERFERENCES

No other appeals, interferences or judicial proceedings are known which would be related to, directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

Claims 18-24 and 32 stand finally rejected. The rejection of claims 18-24 and 32 is being appealed, a copy of which, as currently pending, is included in the Claims Appendix herein below.

IV. STATUS OF AMENDMENTS

Subsequent to the final rejection, an amendment was filed on February 13, 2006 canceling claims 25-31. According to the Advisory Action mailed March 2, 2006, this amendment was entered. No other amendments to the claims have been submitted subsequent to the final rejection.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Independent claim 18 is directed toward a computer system including a processor and a memory coupled to the processor. The memory includes program instructions configured to implement a plurality of device drivers. As described in Appellants' specification, the devices of a computer system may include devices controlled by device drivers that typically form part of the software executed on a central processor unit. The devices of the computer system may be divided into groups each containing one or more devices. Each group might be incorporated as part of a Field Replaceable Unit (FRU), which is an item of hardware that can be added to or removed from a computer system. For example, a desktop computer system may have a single FRU while a server may be constructed using many FRUs. The devices of a computer system will typically have a hierarchical inter-relationship, such as a hierarchical tree structure, and any FRUs of the system may have an inter-dependent hierarchy related to the device hierarchy. *See, e.g.*, FIGs. 1-5, 11 and 13-15; page 2, lines 12-17; page 3, lines 23-27; page 5, lines 9-26; page 6, lines 4-23; page 7, lines 11-15; page 9, lines 9-16; and page 15, lines 12-28.

Each of the device drivers is operable to monitor an operational status of one of a plurality of devices. To monitor the operational status, the device driver is configured to generate environmental data representative of at least one parameter value of at least one sensor associated with the device. For example, environmental sensors may form part of the devices within the computer system, such as within FRUs, or may separately monitor environmental conditions on an FRU as a whole. Such sensors may provide data representative of sensed parameters. Environmental data may include information regarding parameters, logical flags or signals that provide information appertaining to the operational status of components that are being monitored within the device. Environmental information may provide an indication of the operating status of components within a device with respect to a sensor's location. Sensed parameters and/or environmental data may include, for example, temperature, power consumption or fan speed, among other things. *See, e.g.*, FIGs. 1-5, 11 and 13-15; page 2, lines 12-17; page 3, lines 15-22; page 6, line 26 – page 7, line 2; page 7, lines 11-15; page 7, line 23 –

page 8, line 2; page 8, lines 9 -20; and page 13, line 22 – page 14, line 7.

Consequent upon a change in the operational status of the monitored device, the device driver is operable to generate fault report data indicating whether the change of operational status of the monitored device was caused internally within the monitored device or externally by another device connected to the monitored device. By monitoring the operation of a device, device drivers are able to detect a change in relative performance for the device. Device drivers may generate fault reports indicating a current status of the device, such as up, degraded, or down. A fault report may also indicate the location, such as internal or external, of the fault. Device drivers that generate fault reports including an indication of whether a change in operational status was caused internally or externally allow a fault response processor to generate an estimation of the identity of the device or devices that are likely to be faulty. For example, in some embodiments, when fault report data indicates that a change of status was caused externally, a device driver may also generate fault direction information indicating a connection from which the external fault was perceived. The direction of the external fault may provide an indication of which device or devices caused the external fault. For example, a fault response processor may extract information from fault reports and estimate which device or devices are faulty. *See, e.g.*, FIGs. 1-5, 11 and 13-15; page 2, lines 18-22; page 7, lines 11-22; page 8, line 9 – page 9, line 16; and page 13, line 6 – page 14, line 15.

Independent claim 32 is also directed to a computer system including a processor and a memory that includes program instructions configured to implement a plurality of device drivers. As with the computer system of claim 18, described above, each of the device drivers of claim 32 is operable to monitor an operational status of one of a plurality of devices. Additionally, each of the device drivers of claim 32 is operable to generate operational status information from at least one of: a number of memory accesses performed, a time taken to respond to a command, and an amount of data processed. For example, performance parameters of devices, such as the time to response to a command or an amount of data received via an I/O bus, may be used to determine an

operation status for a device. Additionally, a device driver may monitor whether the device is correctly processing information. The device drivers are thus able to detect a change in relative performance for a device. *See, e.g.*, FIGs. 1-5, 11 and 13-15; page 2, lines 12-17; and page 7, lines 4-15.

Consequent upon a change in the operational status of the monitored device, the device driver is operable to generate fault report data indicating whether the change of operational status of the monitored device was caused internally within the monitored device or externally by another device connected to the monitored device. Please refer to the description of claim 18 above for a more detailed discussion regarding generating fault report data indicating whether a change in operational status of a monitored device was caused internally within the monitored device or externally by another device connected to the monitored device.

The summary above describes various examples and embodiments of the claimed subject matter; however, the claims are not necessarily limited to any of these examples and embodiments. The claims should be interpreted based on the wording of the respective claims.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 18-24 and 32 stand finally rejected under 35 U.S.C. § 102(e) as being anticipated by Canady et al. (U.S. Patent 6,385,665) (hereinafter "Canady").

VII. ARGUMENT

Claims 18-24 and 32 stand finally rejected under 35 U.S.C. § 102(e) as being anticipated by Canady et al. (U.S. Patent 6,385,665) (hereinafter "Canady"). Appellants traverse this rejection for at least the following reasons.

Regarding claim 18, Canady fails to disclose a computer system comprising a processor and a memory coupled to the processor, wherein the memory comprises program instructions configured to implement a plurality of device drivers, each operable to monitor an operation status of one of a plurality of devices, wherein to monitor the operational status the device driver is configured to generate environment data representative of at least one parameter value of at least one sensor associated with the device. Instead, Canady teaches a system that includes application card software residing on **separate application cards**. Canady's application card software along with unit controller software and system manager software performs the fault management functions of Canady's system (Canady, column 4, lines 23-32). Canady teaches software (20, 21, 22) executing on different hardware systems and devices, rather than teaching a plurality of devices drivers each operable to monitor an operational status of one of the plurality of devices, where the plurality of devices drivers are all implemented by program instructions from the same memory. Appellants' claim 18 recites a completely different system architecture from that of Canady. In Appellants' claim 18, the plurality of device drivers are implemented by program instructions on the same memory.

The Examiner contends that in Canady's system, the software on the system managers represents one plurality of devices drivers, while the software on the unit controllers and on the application cards represent two other pluralities of devices drivers and that each device driver is operable to monitor one of a plurality of devices. However, none of the software elements 20, 21 and 22 in Canady are described as a plurality of device drivers all implemented by program instructions on the same memory. Instead, the software components 20, 21 and 22 in Canady are very clearly distributed on separate devices. Moreover, Canady teaches that the various layers of his software work together

to perform the fault detection and fault management in his system. For instance, Canady clearly states that the "fault management system and method of the present invention *occupies all architectural layers*, and is primarily divided into two major building blocks, Fault Detection, and Fault Managing" (italics added, Canady, column 4, lines 50-53). Canady further teaches that software at all levels of his architecture take part in his fault management system (*see, e.g.*: Canady, column 4, lines 58-60; column 65-67; column 5, lines 11-20). Canady clearly does not teach a plurality of device drivers implemented by program instructions *from the same memory*, each operable to monitor an operational status of one of a plurality of devices.

Furthermore, by specifically teaching a distributed fault detection system that is implemented across different devices and different hardware architecture levels, **Canady teaches away** from a computer system including a processor and a memory, where the memory includes program instructions configured to implement a plurality of device drivers, each operable to monitor an operation status of on a plurality of devices. Canady requires one of software components 20, 21 and 22 running separately on each of the various cards and controllers of his system to perform the heartbeat test among the various cards and controllers (col. 4, line 56 – col. 5, line 10). Canady's teachings simply do not apply to a plurality of devices drivers all running from the same memory of a single computer system as recited in Appellants' claim 18.

In the Advisory Action of March 2, 2006, the Examiner did not provide any substantive rebuttal whatsoever of the above arguments.

Appellants note that anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim. M.P.E.P 2131; *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984). The identical invention must be shown in as complete detail as is contained in the claims. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Since Canady clearly does not teach a plurality of device drivers implemented by program instructions *from the same memory*,

Canady clearly cannot be said to disclose the identical invention as recited in Appellants' claim 18. In fact, as shown above, Canady requires that his software components 20, 21 and 22 run separately (i.e. from different memories) on each of the various cards and controllers of his system.

For at least the above reasons, the rejection of claim 18 is clearly not supported by the cited art and removal thereof is respectfully requested. Similar remarks also apply to claim 32.

VIII. CONCLUSION

For the foregoing reasons, it is submitted that the Examiner's rejection of claims 18-24 and 32 was erroneous, and reversal of his decision is respectfully requested.

The Commissioner is authorized to charge the appeal brief fee of $500.00 and any other fees that may be due to Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C. Deposit Account No. 501505/5681-10800/RCK. This Appeal Brief is submitted with a return receipt postcard.

Respectfully submitted,

Robert C. Kowert
Reg. No. 39,255
Attorney for Appellants

Meyertons, Hood, Kivlin, Kowert & Goetzel, P.C.
P.O. Box 398
Austin, TX 78767-0398
(512) 853-8850

Date: May 22, 2006

IX. CLAIMS APPENDIX

The claims on appeal are as follows.

18. A computer system, comprising:

a processor; and

a memory coupled to the processor, wherein the memory comprises program instructions configured to implement:

a plurality of device drivers, each operable to:

monitor an operational status of one of a plurality of devices, wherein to monitor the operational status the device driver is configured to generate environment data representative of at least one parameter value of at least one sensor associated with the device; and

consequent upon a change in the operational status of the monitored device, to generate fault report data indicating whether the change of operational status of the monitored device was caused internally within the monitored device or externally by another device connected to the monitored device.

19. A computer system as claimed in Claim 18, wherein the fault report data includes an indication of an operational status of the monitored device.

20. A computer system as claimed in Claim 18, wherein, if the fault report data indicates that the change of operational status of the monitored device was caused

externally, the device driver is operable to generate fault direction information indicative of a connection from which the external fault is perceived.

21. A computer system as claimed in Claim 18, wherein the operational status of the monitored device is one of: up, indicating no fault, degraded, indicating that the monitored device is still operational but with impaired performance, or down, indicating that the monitored device is not operational.

22. A computer system as claimed in Claim 21, wherein the operational status of the monitored device is determined from at least one of: a time to respond to a command, an amount of data communicated via an I/O bus, an amount of data processed by the monitored device, whether information is being correctly processed, or from an error interrupt signal generated by the monitored device.

23. A computer system as claimed in Claim 18, wherein the program instructions are further configured to implement a fault response process operable to analyze generated fault report data generated by one or more of the plurality of device drivers to determine a faulty one of the plurality of devices.

24. A computer system as claimed in Claim 18, wherein each of the plurality of device drivers generates the operational status information from at least one of: a number of memory accesses performed, a time taken to respond to a command, and an amount of data processed.

32. A computer system, comprising:

a processor; and

a memory coupled to the processor, wherein the memory comprises program instructions configured to implement:

a plurality of device drivers, each operable to:

monitor an operational status of one of a plurality of devices,

generate operational status information from at least one of: a number of memory accesses performed, a time taken to respond to a command, and an amount of data processed; and

consequent upon a change in the operational status of the monitored device, to generate fault report data indicating whether the change of operational status of the monitored device was caused internally within the monitored device or externally by another device connected to the monitored device.

X. EVIDENCE APPENDIX

No evidence submitted under 37 CFR §§ 1.130, 1.131 or 1.132 or otherwise entered by the Examiner is relied upon in this appeal.

XI. RELATED PROCEEDINGS APPENDIX

There are no related proceedings.